

## WHAT IS CLAIMED IS:

1. Method of inhibiting overactivity of phagocytes or lymphocytes in an individual by administering to said individual an effective amount of a lignan, wherein
  - i) the phagocytes are neutrophils and the lignan is hydroxymatairesinol or matairesinol or a mixture thereof, or
  - ii) the phagocytes are cells of myeloid origin and the lignan is enterolactone or hydroxymatairesinol or a mixture thereof, or
  - iii) the lymphocytes are T-lymphocytes and the lignan is hydroxymatairesinol, matairesinol or enterolactone or a mixture thereof .
2. The method according to claim 1, wherein the phagocytes are neutrophils and the lignan is hydroxymatairesinol or matairesinol or a mixture thereof.
3. The method according to claim 1, wherein the phagocytes are cells of myeloid origin and the lignan is enterolactone or hydroxymatairesinol or a mixture thereof.
4. The method according to claim 1, wherein the lymphocytes are T-lymphocytes and the lignan is hydroxymatairesinol, matairesinol or enterolactone or a mixture thereof.
5. The method according to claim 2, wherein oxidative burst caused by stimulus of the neutrophils is decreased.
6. The method according to claim 2, wherein the myeloperoxidase activity in converting the reactive oxygen species, released by oxidative burst caused by stimulus of said neutrophils, is decreased.
7. Method of treating or preventing an acute ischemia-reperfusion injury or a chronic condition, caused by overactivity of phagocytes or lymphocytes in an individual, said method comprising inhibiting the overactivity of phagocytes or lymphocytes in an individual by administering to said individual an effective amount of a lignan, wherein
  - i) the phagocytes are neutrophils and the lignan is hydroxymatairesinol or matairesinol or a mixture thereof, or

ii) the phagocytes are cells of myeloid origin and the lignan is enterolactone or hydroxymatairesinol or a mixture thereof, or

iii) the lymphocytes are T-lymphocytes and the lignan is hydroxymatairesinol, matairesinol or enterolactone or a mixture thereof.

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8. The method according to claim 7, wherein the phagocytes are neutrophils and the lignan is hydroxymatairesinol or matairesinol or a mixture thereof.
9. The method according to claim 7, wherein said acute ischemia-reperfusion injury is injury in myocardial infarction, stroke, transplantation, adult respiratory distress syndrome, ischemic heart disease, or endotoxic or hemorrhagic shock.
10. The method according to claim 8, wherein said acute ischemia-reperfusion injury is injury in myocardial infarction, stroke, transplantation, adult respiratory distress syndrome, ischemic heart disease, or endotoxic or hemorrhagic shock.
11. The method according to claim 7, wherein said chronic condition is rheumatoid arthritis, an allergic conditions including also asthma, an inflammatory condition including also inflammatory bowel disease or an inflammatory condition of the skin, HIV, AIDS, psoriasis, Parkinson's disease, Alzheimer's disease, an autoimmune disease, type I or type II diabetes, hypercholesterolemic atherosclerosis, cataract or amyotrophic lateral sclerosis.
12. The method according to claim 8, wherein said chronic condition is rheumatoid arthritis, an allergic conditions including also asthma, an inflammatory condition including also inflammatory bowel disease or an inflammatory condition of the skin, HIV, AIDS, psoriasis, Parkinson's disease, Alzheimer's disease, an autoimmune disease, type I or type II diabetes, hypercholesterolemic atherosclerosis, cataract or amyotrophic lateral sclerosis.
13. The method according to claim 7, wherein the lymphocytes are T-lymphocytes and the lignan is hydroxymatairesinol, matairesinol or enterolactone or a mixture thereof.

14. The method according to claim 13, wherein the chronic condition is an allergic or an autoimmune disease, psoriasis, type I and type II diabetes, rheumatoid arthritis, and type I and type II hypersensitivity reactions, asthma, and inflammatory bowel disease, a rejection reaction due to tissue transplantation, atherosclerosis, or multiple sclerosis.

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15. The method according to claim 7 wherein the phagocytes are cells of myeloid origin, the TNF- $\alpha$  release of which is reduced, and the lignan is enterolactone or hydroxymatairesinol.

- 10 16. The method according to claim 15, wherein the condition is an inflammatory condition, rheumatoid arthritis, inflammatory bowel disease including also Crohn's disease, Alzheimer's disease, or type I or type II diabetes, atherosclerosis, psoriasis, osteoporosis.

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